

## CLAIMS

1. A device for controlling charging (1) of a battery (2) comprising one or more secondary electrochemical cells (7), the device being interfaced between a battery  
5 charger (3), the battery, and at least one piece of electrical equipment (4), the device being characterized in that it comprises: i) measurement means (6) arranged to deliver measurements of a first physical magnitude representative of at least one voltage (U) across the  
10 terminals of at least a portion of said battery (2), and of a second physical magnitude representative of at least one temperature (T) of at least a portion of said battery (2); and ii) control means (8) arranged to determine, as a function of the measurements of said first and second  
15 magnitudes, an electrical control value enabling the battery (2) to be maintained in a selected state of charge and at a mean temperature that is significantly below a selected threshold by using a continuous low current at constant voltage, and without measuring said  
20 current.
2. A device according to claim 1, characterized in that said control means (8) are arranged to deliver said charging reference value to said charger (3).
- 25 3. A device according to claim 1, characterized in that said control means are arranged in such a manner as to deliver the electrical reference value to said charger using a protocol selected from the "PWM" protocol, the  
30 "0-10 V" protocol, and the "4 mA-20 mA" protocol.
4. A device according to claim 1, characterized in that it includes current limiter means (5) fed with current by said charger (3) and arranged in such a manner as to feed  
35 said battery (2) as a function of said electrical reference value as delivered by said control means (8).

5. A device according to claim 1, characterized in that said electrical reference value is representative of a current.

5 6. A device according to claim 1, characterized in that said electrical reference value is representative of a voltage.

7. A device according to claim 1, characterized in that  
10 said measurement means (6) are arranged to deliver to said control means (8) measurements of the local voltage across the terminals of at least one of the secondary electrochemical cells (7) of said battery.

15 8. A device according to claim 7, characterized in that said measurement means (6) are arranged to deliver to said control means (8) measurements of the local voltage across the terminals of each secondary electrochemical cell (7) of said battery (2).

20 9. A device according to claim 1, characterized in that said measurement means (6) are arranged to deliver to said control means (8) measurements of the local temperature of at least one of the secondary  
25 electrochemical cells (7) of said battery (2).

10. A device according to claim 1, characterized in that said low charging current lies in the range about  $I_c/100$  to  $I_c/5000$ , and in particular in the range  $I_c/500$  to  
30  $I_c/2000$ .

11. A device according to claim 1, characterized in that it includes a communications interface (9) coupled to said control means (8).

35 12. A battery (2) comprising at least one secondary electrochemical cell (7), the battery being characterized

in that it is fitted with a control device (1) according to any preceding claim.

5 13. A battery (2) according to claim 12, characterized in that said secondary electrochemical cells (7) are selected from a group comprising at least: nickel/metal-hydride (Ni/MH), nickel/cadmium (Ni/Cd), lithium/ion (Li/Ion), and lead-acid (Pb/PbO<sub>2</sub>) storage cells.

10 14. A device (1) for controlling a battery (2) according to claim 1, the device being used in a field selected from the group comprising: electrically-powered vehicles, aviation, rail transport, ground stations, handheld power tools, and telephony.

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